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IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing

Special Issue on
Earth Observations and Remote Sensing for Urban Land Cover Classification and Change Detection

With the rapid developments happening in urbanization, understanding the dynamics of urban areas is crucial for effective urban planning, resource management, and conservation of environment. With the utilization of advanced remote sensing technologies, the monitoring of urban landscapes could be revolutionized integrating sophisticated classification algorithms. This can help in solving the complexities in the urban landscapes and gain valuable insights in their composition and structure. In this scenario, leveraging remote sensing data acquired from satellites, aircraft or drones, one can capture the intricate spatial and spectral characteristics of urban areas by classifying land cover into categories such as vegetation, surfaces, water bodies, soil and others. This information is very vital for urban planners, policymakers, and researchers for providing a clear understanding of the spatial and temporal dynamics of urbanization. Moreover, implementation of Earth observations and remote sensing for urban land cover classification and change detection requires a combination of technical expertise, data acquisition, algorithm development, and validation. Only by following these process researchers and practitioners can effectively utilize remote sensing to gain valuable insights into urban land cover dynamics and support sustainable urban development. However, using remote sensing for earth observation in urban areas has its own challenges like diverse nature of urban environments, data availability and accessibility, classification accuracy and uncertainty etc. These challenges can be addressed by implementing Integration of multi-source data, continuous monitoring and analysis, and by using advanced classification algorithms. Also, these solutions will contribute to a better understanding of urban dynamics and support sustainable urban planning and management. The aim of this special issue is to foster a complete understanding of Earth observations and remote sensing in urban land cover classification and change detection. We encourage researchers to explore these topics, shedding light on the advancements, challenges, and opportunities in Earth observations and remote sensing for urban land cover classification and change detection.

The broad topics include (but are not limited to):
- Integration of satellite, aerial, and drone-based remote sensing data for urban land cover analysis
- Novel machine learning and deep learning algorithms for urban land cover classification
- Change detection techniques and methodologies in urban environments
- Spatial and temporal analysis of urban land cover dynamics
- Fusion of remote sensing data with socioeconomic and environmental data for comprehensive urban analysis
- Land cover changes on urban ecosystems and ecosystem services
- Urban growth modelling and prediction using remote sensing data
- Applications of urban land cover classification in urban planning and sustainable development
- Uncertainty assessment in urban land cover mapping and change detection
- Image processing techniques for feature extraction in urban remote sensing
- Evaluation of the performance and accuracy of different classification algorithms in urban areas
- Integration of high-resolution remote sensing data with urban land cover mapping
- Role of remote sensing in monitoring urban sprawl and its environmental implications
- Ethical considerations and challenges in the use of remote sensing data for urban land cover analysis

Schedule
01.11.2023, Submission system opening
31.May.2024, Submission system closing

Format
All submissions will be peer reviewed according to the IEEE Geoscience and RemoteSensing Society guidelines. Submitted articles should not have been published or be under review elsewhere. Submit your manuscript on http://mc.manuscriptcentral.com/jstars, using the Manuscript Central interface and select the "**Earth Observations and Remote Sensing for Urban Land Cover Classification and Change Detection**" special issue manuscript type. Prospective authors should consult the site https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=9082768 for guidelines and information on paper submission. All submissions must be formatted using the IEEE standard format (double column, single spaced). Please visit http://www.ieee.org/publications_standards/publications/authors/author_templates.html to download a template for transactions. Please note that as of Jan. 1, 2020, IEEE J-STARS has become a fully open-access journal charging a flat publication fee $1,250 per paper.

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